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Site Selection for the

Biofuels

Industry

Location Selection for

Converging Technologies

Pharmaceutical Site Selection: 2008 Outlook





## Department of Economic and Community Development

William Snodgrass/Tennessee Tower Building, 312 8th Avenue North, 11th Floor, Nashville, TN 37243

Matthew Kisber Commissioner

Phil Bredesen Governor

Dear Trade & Industry Development Readers:

Tennessee is good for business, offering a beneficial labor environment, productive and educated work force, wonderful quality of life and wealth of technology resources. These factors combine to create a business climate that give companies a winning edge in their long-term growth and

Tennessee boasts an ideal location and growing transportation infrastructure. We are home to seven major interstates, with 75 percent of the U.S. population within a day's drive. We also have the world's busiest cargo airport in Memphis, and our proximity to FedEx and UPS hubs are important for companies with time-sensitive delivery windows.

Each year, we strategically review our incentives to ensure Tennessee maintains a competitive advantage over other states and nations. In the past five years, we've made more changes to our state's pro-business incentives than in the previous two decades combined. Tennessee has worked hard to eliminate red tape, improve customer service and create strong partnerships with local leaders, resulting in more than 108,000 new jobs and capital investments of \$13.4 billion

We welcome the opportunity to learn more about your business and discuss Tennessee's since 2003. programs and incentives. For more information about the advantages of doing business in Tennessee, visit www.tnecd.gov or call 615-741-1888.

Warmest Regards,

Phil Bredesen Governor

Matthew Kil Matthew Kisber Commissioner

## An Emerging Leader:

Tennessee's Progressive Approach to Biofuels Research and Production



In ORNL's bioconversion laboratory, Babu Raman works with samples of a microbe that could simplify future cellulosic biofuel production.

o put it simply: Tennessee is on the move in the alternative fuels marketplace," declared Governor Phil Bredesen at the state's first-ever Governor's Conference on Biofuels last spring. More than 250 attendees from nine states took advantage of the educational and networking opportunities with a focus on Tennessee's growing biofuels industry.

In fact, Tennessee is not only on the move, but quickly charging ahead. The state is poised to become a national leader in the production, distribution and use of alternative fuels through innovative initiatives on state and local levels, research partnerships, and education and training.

#### State Initiatives

In 2005; Governor Bredesen created the interagency, Alternative Fuels Working Group, comprised of some of the best minds in the departments of Agriculture, Economic and Community Development, Environment and Conservation, General Services, Health and Transportation. This

group gathered information from experts, private businesses and key stakeholders and devised a plan for moving forward in the realm of alternative fuels.

The Working Group's initial studies resulted in a \$4 million package that in part helped fund three new grant and low interest loan programs: Agricultural Feedstock Processing Loans, Innovation Grants and Green Island Corridor Grants.

Agricultural Feedstock Processing Loans are designed to attract investment in soybean crushing facilities to create local markets for Tennessee-grown soybeans that supply oil for biodiesel. Innovation Grants are awarded to help governments and state-funded universities increase the use of alternative fuels in their fleets and measure positive impacts to state air quality.

Green Island Corridor Grants are used to build a network of publically-accessible B20 and E85 refueling stations, or "Green Islands," along Tennessee's major highways. The program assists retail stations with the capital costs of converting or in-



Governor Phil Bredesen unveiling BioTenn, a campaign to raise the visibility of biofuels in Tennessee, during the state's first ever Biofuels Day.



Harvesting switch grass at an experimental test field at the University of Tennessee.

stalling the necessary infrastructure to offer biofuels to the public.

For the 2007-2008 fiscal year, Governor Bredesen proposed, and the Tennessee General Assembly approved, another \$61 million for a comprehensive alternative fuels strategy. Combined with \$11.6 million in existing funding for an ongoing biofuels research project at Oak Ridge National Laboratory, the total package comes to a \$72.6 million investment in Tennessee's energy future.

"These investments are about joining the best of Tennessee's agricultural and academic resources and leveraging them in a unique way that will position us to take advantage of the opportunities of tomorrow," Bredesen said.

#### Local Initiatives

At the local level, Tennessee has innovative projects spearheaded by Tennessee companies, organizations and local governments stretching across the state.

Loudon County is home to Dupont Tate & Lyle, one of the (Continued on page 30)

five largest ethanol production plants in the country. The company opened a \$100 million facility last year and is the first in the world to manufacture an innovative cornbased product that can replace petroleumbased ingredients in many consumer items.

West Tennessee is home to Memphis Biofuels and Milagro Biodiesel, both working to increase the state's biodiesel production capacity.

Tennessee's Clean Cities Coalitions are working at the grassroots level to educate public and private sector fleet managers, businesses and citizens about cleaner fuels. The nonprofit BioTN is a group formed to promote partnerships between Tennessee schools, higher education and businesses to advance science and technology.

Local governments in Carter County and Blount County and transit authorities in Knoxville, Nashville and Memphis are burning biodiesel in their heavy-duty equipment and busses. Additionally, McMinnville Electric System in McMinnville, Tenn., is one of the first utilities in the nation to create electric power from biodiesel.

#### **Research Partnerships**

A team led by Oak Ridge National Laboratory in Oak Ridge, Tenn. was awarded a \$125 million grant in June 2007 by the Department of Energy to build a Bioenergy Science Center. The new facility is headquartered on the campus of ORNL and develops processes for converting plants, including switchgrass and poplar trees, into fuels.

Extensive research by ORNL and the University of Tennessee has shown that switchgrass is perfectly suited to the southeast climate. It grows in poor soil, can withstand floods and droughts, and is resistant to pesticide and diseases. UT has purchased all available quantities of switchgrass seed in the country for further research, and farmers in East Tennessee al-

### **TENNESSEE**

Incentives at a Glance

Tennessee has long been considered ness-friendly economic climates. The state offers a variety of incentives, including job training reimbursement and numerous tax credits. The Tennessee Tool Kit, a comprehensive guide to all incen-

#### Job Training

- Tennessee Job Skills a program similar to FJTAP, but with an emphasis on companies creating high-skill, technology focused sectors.

#### Tax Credits

- Jobs Tax Credit a credit based on investment and number of jobs created.
- · Rural Opportunity Initiative an enhanced jobs tax credit for companies locating or expanding in qualifying

- based on the cost of relocation and
- Data Center Tax Credit a credit for

ready have fields planted.

"We know we can make ethanol from grassy and woody materials," Bredesen said. "The challenge is producing it in large volumes and at a price that is competitive with gasoline, and in proving we can be the ones to take the discovery from the laboratory to the marketplace."



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#### **Education and Training**

Governor Bredesen has made education a top priority in Tennessee, with special emphasis on math and science. He has also made it clear that future plans for biofuels must also include plans for educating and training future generations.

"Right now it's about building solid foundations, and in doing so, we need to focus on our young people – the engineers, scientists and farmers who, in 10 or 15 years, will be the leaders in fields such as alternative fuels," said Bredesen.

The first Governor's Academy for Math and Science opened its doors in August 2007. This two-year residential program is designed for the best and brightest math and science students from across the state. Located in Knoxville, Tenn., students travel to laboratories at UT and ORNL to learn and assist in research.

Governor's Schools are another avenue Tennessee is using to educate its young people. These summer programs, held at state universities, are designed to give gifted high school students an early start in college credit and exposure to education and research only a university can provide.

Three new Governor's Schools have been added for this summer focusing on high-level math and science skills, including computational physics, emerging technologies, and scientific models and data analysis. These are in addition to the nine other Governor's Schools in fields such as Engineering, Arts, Technology, Leadership, and Agricultural Science, which includes a biofuels course where students produce their own ethanol and use it to run engines.

"These schools are a big piece of the puzzle as we look toward making Tennessee a national and global leader in the realm of math and sciences. They are just like the alternative fuel program, an investment in the future. In both cases, it may be some time before we start to see our returns, but we can already see where we're headed, and the future looks bright from here," said Bredesen.

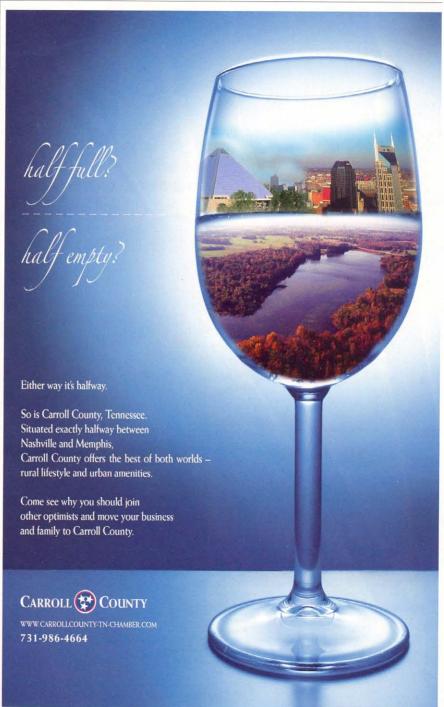
The future does indeed look bright for Tennessee. Thanks to the state's step-by-step planning, investments at the outset, and partnerships across sectors, Tennessee's leadership in the world of biofuels seems assured.

"With our top research universities and labs and our prime rural land, we have the resources. And with farmers across the state looking for new, sustainable opportunities, business leaders looking to take risks, and engineers and scientists with the skill and training to implement ideas, we have the people

too," commented Bredesen.

"Our next steps will be crucial. We'll need to take some chances, seize some opportunities, but I believe the payoffs will be great," Bredesen added.

For more information on Tennessee's biofuels initiatives, please visit www.biotenn.org. T&ID



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